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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/014,131	12/13/2001	Toshikazu Onishi	35.C13314 D2	3837

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FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER	
SANTIAGO, MARICELI	

ART UNIT	PAPER NUMBER
2879	

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/014,131	ONISHI ET AL.	
	Examiner	Art Unit	
	Mariceli Santiago	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *16-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/248,102.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The Amendment, filed on November 26, 2004, has been entered and acknowledged by the Examiner.

Cancellation of claims 1-15, 24 and 25 has been entered.

Claims 16-23 are pending in the instant application.

Specification

The substitute specification filed December 13, 2001 has been approved for entry by the Examiner.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikeda et al. (US 5,591,061) in view of Yamanobe (EP 0 788 130).

Regarding claims 16-18, Ikeda discloses a method of manufacturing an electron source comprising the steps of exposing a surface of a substrate to a sealed atmosphere, on which a plurality of electron-emitting devices are formed, and introducing a gas containing carbon into the sealed atmosphere (Column 11, lines 51-67), wherein the sealed atmosphere is formed by a chamber. Ikeda discloses "The vacuum chamber was so operated by the control unit **55** that, after evacuating the vacuum chamber by means of an ion pump to about 10^{-6} Pa, acetone was

introduced into the chamber by regulating a gas supply unit **51** and a solenoid valve **52** until the inner pressure of the vacuum chamber rose to 2.7×10^{-1} Pa. At the same time, the drive circuit of the vacuum pump unit was also operated by the control unit **55** to regulate the evacuation rate by means of a gate valve.", (Column 26, lines 22-31). Accordingly, as clearly stated by Ikeda, the introducing of gas containing carbon is performed while exhausting the sealed atmosphere formed by the camber.

Ikeda discloses heating the entire chamber after the activation step (Column 14, lines 17-36) but fails to particularly disclose heating the entire chamber prior the introducing step. However, in the same field of endeavor, Yamanobe discloses a method of manufacturing an electron source comprising the step of activating the emitter source comprising coating the emitter with a carbon material and causing a current to energize the electro-conductive member. Yamanobe discloses that water vapor causes non-uniform results in the activation process. Since a non-uniform display is undesirable, one of ordinary skill in the art at the time of applicants' invention to remove the water vapor from the vacuum chamber before an activation step, whether the carbon is introduced as a gas or otherwise, by heating the vacuum chamber prior the introducing step. Furthermore, Ikeda discloses a heating step after the activation step being performed on the entire chamber (Column 14, lines 17-36), accordingly, one of ordinary skills in the art would reasonable expect the execution of any heating step required during the manufacturing process of Ikeda-Yamanobe to be performed by means of heating the entire chamber, since Ikeda acknowledges the suitability and successful performance of heating the chamber when thus required.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of invention was made to provide the step of heating the entire chamber of Ikeda prior to introducing the carbon gas to remove the water vapor so as to obtain more uniform results in

the activation process since Yamanobe teaches that water vapor undesirably affects the activation process and Ikeda acknowledges the suitability and successful performance of heating the entire chamber when thus required.

Regarding claim 19, Ikeda discloses a method further comprising the step of applying a voltage to an electro-conductive member, the electro-conductive member being disposed on the surface of the substrate (Abstract).

Regarding claim 20, claim 20 is rejected for the same reasons stated in the rejection of claim 1 above, furthermore, Ikeda discloses wherein an electro-conductive member, in which an electron-emitting region is formed, being disposed on the surface of the substrate (Abstract).

Regarding claim 21, Ikeda discloses a method further comprising the step of applying a voltage to the electro-conductive member (Abstract).

Regarding claims 22 and 24, claims 22 and 24 are rejected for the same reasons stated in the rejection of claim 1 above, furthermore, Ikeda discloses an electro-conductive member, capable of being subjected to an activation of an electron-emitting function, being disposed on the surface of the substrate (Abstract).

Regarding claims 23 and 25, Ikeda discloses a method further comprising the step of applying a voltage to the electro-conductive member (Abstract).

Response to Arguments

Applicant's arguments with respect to claims 16-25 have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mariceli Santiago whose telephone number is (571) 272-2464. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

2/22/05

Mariceli Santiago
Patent Examiner
Art Unit 2879